

STATE WATER RESOURCES CONTROL BOARD  
DIVISION OF WATER RIGHTS  
P.O. BOX 2000  
SACRAMENTO, CA 95812-2000

## INITIAL STUDY

### I. Background

PROJECT TITLE: Christine Hanna Application to Appropriate Water

APPLICATION: 30695

APPLICANT: Christine Hanna  
Hanna-Bismark Vineyard  
9280 Highway 128  
Healdsburg, CA 95448

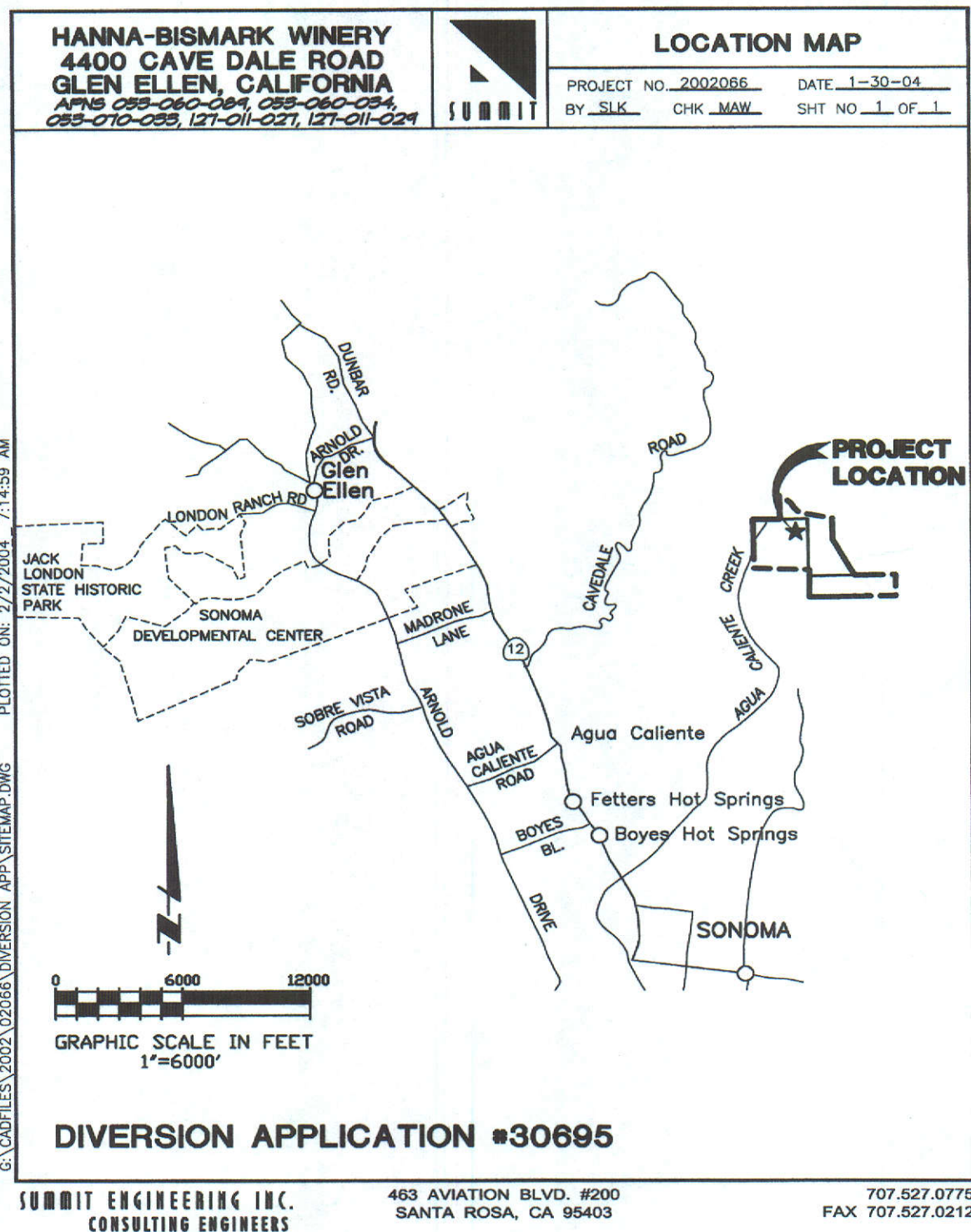
APPLICANT'S CONTACT PERSON: Barbara Brenner  
Stoel Rives, LLP  
770 L Street, Suite 800  
Sacramento, CA 95814  
(916) 447-0700

GENERAL PLAN DESIGNATION: Rural Resource Development

ZONING: RRD – Rural Resource Development, 100-acre minimum

### Introduction

On April 10, 1998 Christine Hanna (Applicant) filed Water Right Application 30695 with the State Water Resources Control Board (State Water Board).<sup>i</sup> The project is located on 84 acres, at 4400 Cavedale Road, approximately 4.2 miles northeast of the City of Sonoma in southeastern Sonoma County. This location can be found within Sections 18, 19, and 20 of Township 6N, Range 5W, MDB&M, shown on the Sonoma U.S. Geological Survey (USGS) 7.5 minute topographic quadrangle. The Applicant is proposing to construct a 15 acre foot (af) reservoir in a primary watershed that drains into an unnamed tributary to Agua Caliente Creek in the Mayacmas<sup>ii</sup> mountain range. Agua Caliente Creek drains to Sonoma Creek, which discharges flow to San Pablo Bay (Figure 1, Location Map).



**Figure 1: Project Location Map**

### **Project Description**

The Applicant is seeking the right to appropriate and store 15 acre-feet of surface water per annum (afa) from an Unnamed Stream tributary to Agua Caliente Creek thence Sonoma Creek. The project consists of a proposed 24.9-foot high, 240-foot long, earthen dam, which will form an onstream reservoir with a surface area that would encompass one (1.0) acre. The Point of Diversion (POD) is within an ephemeral drainage swale. The area of the watershed above the POD is approximately 30.37 acres. The season of diversion would be from December 15<sup>th</sup> through March 31<sup>st</sup> of the following year. The Applicant intends to use the water for irrigation and frost protection of up to 84 acres of existing vineyard (Figure 2, Site Map).

There is one well located in the southeastern portion of the property. The depth is 1,100 feet and when drilled in 1991, it pumped at 120 gallons per minute. The yield has declined over the years such that each vine is getting only six gallons per week of water during the height of the growing season. Ideally, each vine should receive 24 gallons of water per week.<sup>iii</sup> The existing well will continue to be used after the reservoir is developed.



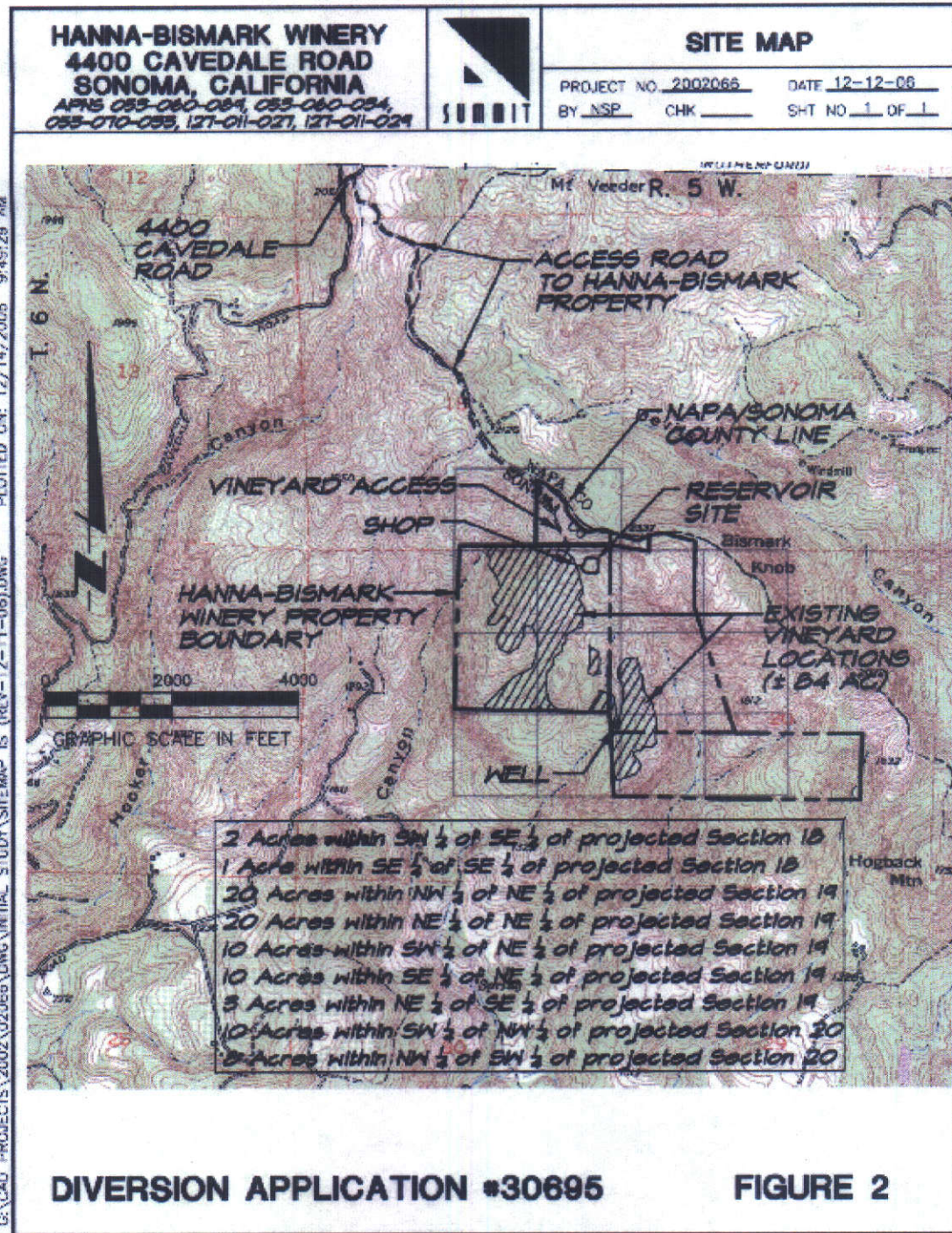


Figure 2: Site Map



## **Project Background**

On April 10, 1998 the Applicant filed Application 30695 to Appropriate Water by Permit with the State Water Board (A030695).

On March 17, 2000, the State Water Board, Division of Water Rights (Division) distributed notice of the Hanna-Bismark Vineyard water right Application 30695. A protest was filed by the U.S. Fish and Wildlife Service (USFWS) indicating concern about possible effects of the project on the California freshwater shrimp (*Syncares pacifica*) and the California red-legged frog (*Rana aurora draytonii*), which are known to occur in the Sonoma Creek drainage.<sup>iv</sup> This protest has not yet been resolved.

On December 29, 2006, the Applicant filed a Petition for Change to correct a discrepancy with the number of acres in and location of the Place of Use (POU) set forth in A030695 and the March 17, 2000 Notice. It was discovered through advanced GIS technology that the initial POU of 100 acres was inaccurately described in both A030695 and the March 17, 2000 Notice. The application was subsequently amended to encompass a revised, more accurate POU consisting of the 84 acres of existing vineyard. The 84 acres of existing vineyard were planted prior to filing application 30695. Thirty-four (34) acres were planted in 1991 and the remaining fifty (50) acres were planted in 1993. The environmental analyses discussed in this document (e.g., Hanna-Bismark Biotic Assessment and Cultural Resources Study for the Hanna-Bismark Vineyard Project) were completed in September and October of 2000, several years after planting of the existing vineyard. The Cultural Resources Study encompassed the existing vineyard and proposed reservoir area as well as areas originally proposed for future planting. The Biological Resources Report encompassed the proposed reservoir site, the length of the unnamed stream within the property boundaries, and surrounding areas. The current POU of approximately 84 acres no longer includes future development of vineyards as previously proposed and thus reduces any future environmental impacts, which may have been caused by such future development.

## **Environmental Setting**

The project site is located at elevations between approximately 1,900 and 2,000 feet and lies within the upper watershed of the Mayacmas Range. The geologic units mapped at the site are "Sonoma Volcanics", composed of basalts, rhyolites, andesites and other pyroclastic rocks.<sup>v</sup> Soils within the study area are classified as Rock land (RoG). Rock land consists of stony steep slopes and ridges that are generally in rough mountainous areas where there is little soil material. Erosion would be minimal given the lack of soil. Some downward creep of rocky material occurs with this soil classification.<sup>vi</sup>

The reservoir site is in a convex portion of the watershed, which is not recognizable as a stream channel. The surrounding vegetation (e.g., manzanita, *Ceanothus*, knobcone pine, grasses, etc.), is more similar to that of a chaparral or high desert association rather than that of a riparian association. Given the habitats and substrates of the site, the most likely species to occur would be Sonoma manzanita, Cobb Mountain lupine and Sonoma beardtongue.



Special status plant species with the potential to occur in the project vicinity are listed in Table 1 of the Biotic Assessment.<sup>vii</sup> The only wildlife observed during field surveys were western fence lizards, jackrabbits, and a few birds, including California quail, mourning dove, raven, kestrel, and turkey vulture.<sup>viii</sup>

The proposed reservoir site is about 1,000 feet from the Napa County line. Once capacity is reached in the reservoir, the inflow will equal the outflow, meaning the additional water is bypassed from the reservoir outlet back to the tributary via an overflow spillway on the opposite end of the reservoir from the inlet structure. Annual precipitation averages 40 inches per year. The runoff coefficients for the sub-watersheds of the project area are 0.41 - 0.46.<sup>ix</sup>

### **Responsible and Trustee Agencies**

The State Water Board is the lead agency under CEQA with the primary authority for project approval. In addition, the following responsible and trustee agencies may have jurisdiction over some or all of the proposed project, or over public trust resources potentially affected by the project:

- California Department of Fish and Game (DFG) – Streambed Alteration Agreement, California Endangered Species Act (CESA) Compliance.
- San Francisco Bay Regional Water Quality Control Board (RWQCB - San Francisco Bay Region) – Section 401 Water Quality Certification, Clean Water Act (CWA) Compliance.
- National Marine Fisheries Service (NMFS) – Consultation pursuant to Sections 7, 9 and 10 of the Endangered Species Act (ESA) regarding protection of plants and wildlife that are listed as endangered or threatened.
- U.S. Army Corps of Engineers (USACE) – Section 404, Clean Water Act (CWA) Compliance.<sup>x</sup>
- U.S. Fish and Wildlife Service (USFWS) - Federal Endangered Species Act (ESA) Compliance.
- Sonoma County Permit and Resource Management Department (PRMD) – Grading and Building Permit Compliance.
- Sonoma County Agricultural Commissioners Office – Vineyard Erosion and Sedimentation Control Ordinance (VESCO)<sup>xi</sup>

## **II. Environmental Impacts**

The environmental factors checked below could be potentially affected by this project. See the checklist on the following pages for more details.

<input type="checkbox"/> Land Use and Planning	<input type="checkbox"/> Transportation/Circulation	<input type="checkbox"/> Public Services
<input type="checkbox"/> Population and Housing	<input checked="" type="checkbox"/> Biological Resources	<input type="checkbox"/> Utilities and Service Systems
<input checked="" type="checkbox"/> Geological Problems /Soils	<input type="checkbox"/> Energy and Mineral Resources	<input type="checkbox"/> Aesthetics
<input checked="" type="checkbox"/> Hydrology/Water Quality	<input type="checkbox"/> Hazards	<input type="checkbox"/> Cultural Resources



<input type="checkbox"/> Air Quality	<input type="checkbox"/> Noise	<input type="checkbox"/> Recreation
<input type="checkbox"/> Agriculture Resources	<input type="checkbox"/> Mandatory Findings of Significance	

The project would also result in beneficial impacts related to agricultural resources, and emergency response/fire protection.

# 1. GEOLOGY and SOILS. Would the project:

	Potentially Significant	Less than significant With Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
i) Rupture of a known earthquake fault, as delineated in the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines & Geology Special Publication 42.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
ii) Strong seismic groundshaking?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
iii) Seismic-related ground failure, including liquefaction?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
iv) Landslides?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Result in substantial soil erosion or the loss of topsoil?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Be located on expansive soils, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Have soils incapable of adequately supporting the use of septic tanks or alternate wastewater disposal systems where sewers are not available for the disposal of wastewater?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

The following section summarizes the Geotechnical Investigation for the Irrigation Reservoir prepared by Bauer Associates on March 16, 2001.<sup>xii</sup>



### Site Geology and Soils

The proposed reservoir will be located in a swale area east of an existing mobile home and shop. The geologic maps reviewed indicate that the site is underlain by bedrock of the Sonoma Volcanics. Regionally, the Sonoma Volcanics consist of agglomerate, tuff, volcanic conglomerate, and andesite. The results of site observation and subsurface investigation by Bauer Associates indicate that the site is underlain by tuff/tuff breccia bedrock. The bedrock varies from low hardness to hard, and friable to strong. Excavation of the bedrock was typically low to moderate in difficulty with equipment used.

Bedrock is occasionally exposed at the surface at various locations in the development area. In most places, the bedrock is blanketed by colluvial soils consisting of sandy clays occasionally with gravels and cobbles. Colluvial soils are accumulations of weathered rock and soil transported downslope by gravity. The colluvial soils are prone to continued downslope creep. The natural surface soils are often porous within the upper 1 to 2 feet. Porous soils are prone to collapse when saturated and under loads. The surface soils are visually classified to be of low to moderate expansive potential. Expansive soils will experience volume changes with seasonal moisture variations. Based on field observations, Bauer & Associates concluded that the bedrock in this area is relatively pervious.

Soil at the site is dry, rocky and often consists of steep slopes with little soil. The soil is classified as Rock Land (RoG). Rock Land consists of "stony steep slopes and ridges that are generally in rough mountainous areas where there is little soil material. Small shrubs or an occasional stunted tree growing between lichen-covered rocks are the only vegetation." <sup>xiii</sup>

### Springs/Seepage

Springs or seepage were not observed at the site. Groundwater seepage was not encountered within the test pits. Bauer and Associates indicates that groundwater conditions can vary significantly in the project vicinity depending on location and seasonal conditions. <sup>xiv</sup>

### Landslides

The published geologic map by Huffman, *et. al.*, <sup>xv</sup> indicates that the site is within a questioned (possible) landslide. A questioned landslide is a topographic feature that is suggestive (but not conclusive) of landsliding. The mapping by Huffman *et. al.*, is primarily based on aerial photograph interpretation of topographic features with limited field verification. Bauer & Associates did not observe evidence of landsliding within the planned development area during their onsite observation and subsurface exploration. Considering the variable bedrock conditions associated with the Sonoma Volcanics, Bauer & Associates concluded that the site features are likely to result from differential erosion. <sup>xvi</sup>





**Figure 3. The proposed irrigation pond site consists of an ephemeral drainage area located near the ridgeline of the Mayacmas Mountain Range.**

### Faults/Seismicity

"Published geologic maps of the area do not show any active faults at the site. The property is not within a current Alquist-Priolo Earthquake Fault Zone, which could require a detailed investigation to evaluate the hazard of fault surface rupture for certain developments. The nearest faults considered seismically active (experiencing surface rupture within about the last 11,000 years) are the West Napa and Healdsburg-Rodgers Creek faults, located approximately 5 miles to the northeast and 8 miles to the southeast, respectively. The active San Andreas fault is about 28 miles southwest of the site."<sup>xvii</sup> A fault trace considered potentially active is also identified approximately 1.1 mile south of the proposed reservoir site.<sup>xviii</sup>

Throughout the entire Bay Area, seismic groundshaking from earthquakes represents a significant geologic hazard to developments. The intensity of groundshaking would depend on several factors such as distance from the site to the earthquake focus,



magnitude of the earthquake and response of the underlying soil and rock. Based on the results of their analysis, Bauer & Associates judge the site to be suitable for the proposed irrigation reservoir from a geo-technical viewpoint. The potential impacts associated with strong groundshaking from an earthquake would be reduced to a less than significant level by building the reservoir in accordance with the Uniform Building Code for Seismic Zone 4. A Building Permit would be required for the project from Sonoma County Permit and Resource Management Department.<sup>xix</sup>

The Applicant has agreed to the following permit term, substantially as follows, implementation of which would reduce potentially significant impacts to less than significant levels and shall be included in any permit issued pursuant to Application 30695:

- *The Applicant shall obtain a Building Permit from Sonoma County Permit and Resource Management Department and will be subject to all requirements within the Uniform Building Code for Seismic Zone 4.*

#### Erosion/Loss of Top Soil

Construction of the proposed project could potentially result in erosion and sedimentation of downstream waterways. The project would be constructed in accordance with the conditions and specifications that have been developed for the proposed reservoir.<sup>xx</sup> For example, project construction would occur during the dry season. Sonoma County allows for wet weather construction with appropriate erosion control measures.<sup>xxi</sup> However, as an onstream reservoir, construction should be limited to the dry season to protect downstream fisheries resources.<sup>xxii</sup> Erosion control would be implemented in accordance with Section 02290--Erosion and Sediment Control (Conditions and Specifications, Summit Engineering, April 2001). Some of the onsite rock may be suitable for reuse in construction of riprap erosion protection. Suitability would be verified by a Geotechnical Engineer. Suitable rock would be separated and stockpiled for reuse at a location indicated by the owner. No soil would be compacted during periods of rain. Soil that has been stockpiled and wetted by rain or by any other cause would not be compacted until completely drained and until the moisture content is within the limits approved by the Geotechnical Engineer. All excess boulders that have not been crushed during earthwork operations or utilized for riprap would be removed from the construction area and disposed of at an onsite location, as directed by the owner. All debris and waste material would be disposed of offsite in accordance with all local, State and Federal requirements. Further, caution would be taken to avoid spillage of rock, soil, or debris on area roadways. In the event that such spillage occurs, material would be removed and the roadways swept, washed or otherwise cleaned. Erosion and transportation of soils to downstream properties would be avoided. Construction of the reservoir would not be subject to the Sonoma County Vineyard Erosion and Sedimentation Control Ordinance (VESCO), but would be subject to grading requirements of the Sonoma County Permit and Resource Management Department.<sup>xxiii</sup>



The Applicant has agreed to the following permit terms, substantially as follows, implementation of which would reduce potentially significant impacts to less-than-significant levels and shall be included in any permit issued pursuant to Application 30695:

- *Prior to commencing construction of the reservoir, Permittee shall obtain all appropriate grading permits and other permits required by the County of Sonoma. The plans and specifications for the reservoir construction shall be prepared by a licensed civil engineer and submitted to the Chief, Division of Water Rights. The actual construction work shall be limited to the dry season and shall be carried out under the direct supervision of a licensed civil engineer. The project will be constructed in accordance with the Conditions and Specifications for the Irrigation Pond (Summit Engineering, April 2001), and the Suggested Geotechnical Specifications (Bauer and Associates, 2001).*
- *Construction of the storage dam shall not begin until the Sonoma County Engineer, the United States Natural Resource Conservation Service, or a civil engineer registered by the State of California has approved the plans and specifications for the dam. Construction of the dam shall be under the direction of said approving party.*
- *An erosion control plan and revegetation plan for the area where construction equipment will be used and an implementation schedule, prepared by a licensed civil engineer, shall be submitted to and approved by the Chief, Division of Water Rights, prior to starting construction. The plan shall conform to the requirements of Sonoma County and the Streambed Alteration Agreement issued by the California Department of Fish and Game (DFG). Before storing water in the reservoir, Permittee shall furnish evidence, which substantiates that the erosion control/revegetation plan has been implemented. Evidence includes photographs showing the project area vegetation and slopes.*

2. AIR QUALITY. Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project:

	Potentially Significant	Less than significant With Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a) Conflict with or obstruct implementation of the applicable air quality plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Expose sensitive receptors to substantial pollutant concentrations?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>



	Potentially Significant	Less than significant With Mitigation Incorporated	Less-Than- Significant Impact	No Impact
d) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions that exceed quantitative thresholds for ozone precursors)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Create objectionable odors affecting a substantial number of people?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

The project is within the jurisdiction of the Bay Area Air Quality Management District (BAAQMD). Fine particulate matter (PM<sub>10</sub>) is the pollutant of greatest concern with construction activities. PM<sub>10</sub> emissions can result from a variety of construction activities including excavation, grading, vehicle travel on paved and unpaved surfaces, and vehicle and equipment exhaust.<sup>xxiv</sup>

#### Generation of Dust

The project would result in the generation of some dust and vehicle and equipment emissions during project construction. Earth moving activities may cause a temporary degradation of air quality from dust and heavy equipment used during the construction phase of the project. Controls on grading and dam construction activities administered by the County of Sonoma would ensure that these temporary changes in air quality would be less than significant. For example, onsite haul roads and areas of work would be adequately watered and maintained so that dust emission from the site is minimized; and, all trucks hauling soil, sand and other loose materials would be covered or would be required to maintain at least two feet of freeboard. Best management practices (BMPs) would be implemented in accordance with the BAAQMD Guidelines for construction projects.

### 3. HYDROLOGY & WATER QUALITY. Would the project:

	Potentially Significant	Less than significant With Mitigation Incorporated	Less- Than- Significant Impact	No Impact
a) Violate any water quality standards or waste discharge requirements?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>



	Potentially Significant	Less than significant With Mitigation Incorporated	Less- Than- Significant Impact	No Impact
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Substantially alter the existing drainage pattern of the site, including through alteration of the course of a stream or river, or substantially increase the rate or volume of surface runoff in a manner that would:				
i) result in flooding on- or off-site	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
ii) create or contribute runoff water that would exceed the capacity of existing or planned stormwater discharge	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
iii) provide substantial additional sources of polluted runoff	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
iv) result in substantial erosion or siltation on- or off-site?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) Otherwise substantially degrade water quality?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Place housing or other structures which would impede or re-direct flood flows within a 100-yr. flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Expose people or structures to a significant risk of loss, injury, or death involving flooding:				
i) as a result of the failure of a dam or levee?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
ii) from inundation by seiche, tsunami, or mudflow?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g) Would the change in the water volume and/or the pattern of seasonal flows in the affected watercourse result in:				
i) a significant cumulative reduction in the water supply downstream of the diversion?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
ii) a significant reduction in water supply, either on an annual or seasonal basis, to senior water right holders downstream of the diversion?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
iii) a significant reduction in the available aquatic habitat or riparian habitat for native species of plants and animals?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>



	Potentially Significant	Less than significant With Mitigation Incorporated	Less-Than-Significant Impact	No Impact
iv) a significant change in seasonal water temperatures due to changes in the patterns of water flow in the stream?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
v) a substantial increase or threat from invasive, non-native plants and wildlife	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
i) Expose people or structures to a significant risk of loss, injury, or death involving flooding, including flooding as a result of the failure of a levee or dam?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
j) Inundation by seiche, tsunami, or mudflow?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

This section includes the findings from the Water Availability Analysis (WAA) prepared by Summit Engineering (March 2, 2004; WAA Addendum May 24, 2004; WAA, Section 6.0 Bypass Flow, February 16, 2006).<sup>xxv</sup>

#### Erosion or Siltation

As indicated in Section 1, the soils at the site consist primarily of Rock Land on steep slopes. There is little soil material. There are some colluvial soils, which consist of weathered rock and soils that are transported downslope by gravity. Construction of the reservoir will cause some disturbance that could result in potential erosion and siltation in downstream waterways. As a project within agricultural land, preparation of a Storm Water Pollution Prevention Plan (SWPPP) is not required for the project. However, appropriate best management practice measures (BMPs) such as matting, seeding, soil binders and mulch will be applied to disturbed areas and cut and fill slopes in order to minimize soil erosion from wind and/or rain. Measures will be taken to preserve existing vegetation in order to provide natural filtration and reduce disturbed land. Potential drainage paths, such as swales or ditches, will be protected with cobble, riprap, matting, re-vegetation, or other devices such as check dams and gravel bags to dissipate energy and reduce soil erosion. Storm drain inlets and outlets will be protected to prevent sediment laden runoff from entering the storm drain system through the use of sediment settling, trapping, and filtering devices. Matting, netting and straw mulch will be used to protect soil from erosion until vegetation is established. A schedule for inspecting and maintaining BMPs will be developed for the entire construction period including post construction practices. In addition to the implementation of BMPs to address potential impacts related to erosion and siltation, the following permit term, substantially as follows, shall be included in any permit issued pursuant to Application 30695:



- *Erosion control measures shall be implemented in accordance with the requirements of the Sonoma County Permit and Resource Management Department.*

#### Sources of Polluted Runoff

Project construction could result in the use of construction materials that could enter waterways. The Applicant has agreed to the following permit terms, implementation of which would reduce potentially significant impacts to water quality associated with reservoir construction to a less than significant level. In order to prevent water quality degradation due to construction activities, the following permit terms, substantially as follows, shall be included in any permit issued pursuant to Application 30695:

- *No debris, soil, silt, cement that has not set, oil, or other such foreign substance will be allowed to enter into or be placed where it may be washed by rainfall runoff into the waters of the State. When operations are completed, any excess materials or debris shall be removed from the work area.*
- *To prevent degradation of the quality of water during and after construction of the project, Permittee shall file a report of waste discharge pursuant to Water Code section 13260 prior to commencement of construction and shall comply with all waste discharge requirements imposed by the California Regional Water Quality Control Board, San Francisco Bay Region, or by the State Water Resources Control Board.*
- *The Permittee shall obtain all necessary federal, state, and local agency permits required by other agencies prior to construction and diversion of water. Copies of such permits and approvals shall be forwarded to the Chief, Division of Water Rights.*

#### Reduction in the Water Supply Downstream from the Proposed Water Diversion

For the proposed project, the Division required the Applicant to complete a Water Availability /Cumulative Flow Impairment Index Analysis (WAA/CFII). One purpose of the WAA/CFII is to determine the impact of the proposed project on streamflow to evaluate the potential impacts to fisheries resources using guidelines developed by DFG and NMFS<sup>xxvi</sup>. The WAA/CFII report prepared by Summit Engineering (March 2, 2004; WAA Addendum May 24, 2004; WAA, Section 6.0 Bypass Flow, February 16, 2006).<sup>xxvii</sup>, was completed for the proposed project, and has been accepted by the Division. The WAA/CFII report included calculations of Cumulative Flow Impairment Indices (CFIIs) at four project-related Points of Interest (POIs). The POIs listed in the WAA/CFII report and selected by the Division (Division POIs) overlap with those selected by DFG (DFG POIs). The following is an explanation of the locations of the respective POIs:



Via a memo dated May 4, 2004, DFG selected three Points of Interest (POIs) as follows:

- DFG POI 1: The point immediately below the confluence of the Unnamed Stream and Agua Caliente Creek
- DFG POI 2: The point on Agua Caliente immediately above its confluence with Sonoma Creek
- DFG POI 3: The point immediately below the confluence of Agua Caliente Creek and Sonoma Creek.

The Division selected the following POIs (included in the WAA/CFII report), some of which overlap with the POIs selected by DFG:

- Division POI 1: Mouth of Sonoma Creek. This point was not requested by DFG and has a CFII of 3.1%.
- Division POI 2: Agua Caliente Creek immediately upstream from the confluence of Sonoma Creek. This point corresponds with POI #2 requested by DFG and has a CFII of 2.7%.
- Division POI 3: Unnamed tributary immediately upstream from the confluence with Agua Caliente Creek. This point was not requested by DFG and has a CFII of 11%.
- Division POI 4: On Sonoma Creek immediately downstream of Agua Caliente Creek. This point corresponds with POI #3 requested by DFG and has a CFII of 4.2%.

The ephemeral drainage is located at the uppermost portion of the watershed for an unnamed tributary leading to Agua Caliente Creek. The area above the diversion from the unnamed tributary contributes only 1.1% of the flow in the Agua Caliente Creek watershed. The proposed diversion is at the headwaters of this watershed and the applicant would maintain the February Median Flow at the POD during the diversion season. Fish do not spawn or hold-over on ephemeral streams that are dry during the summer months. Resident fish in Agua Caliente are supported by spring flow downstream of the proposed water diversion. Diversion of water at the proposed POD would not result in significant hydrologic impacts on-site or downstream from the project area. See the following section, Biological Resources, for a discussion of CFIs, hydrologic flows, and fish and wildlife bypass flows and terms, as they relate to fisheries resources.

To ensure that the proposed appropriation of water does not exceed the prescribed limits, the following terms, which the applicant has accepted, will be included in any permit or license issued pursuant to Application 30695:

- *The water appropriated shall be limited to the quantity which can be beneficially used and shall not exceed 15 acre feet per annum, to be collected to storage from December 15 of each year to March 31 of the succeeding year. This permit*



does not authorize collection of water to storage outside the specified season of diversion to offset evaporation and seepage losses or for any other purpose. The maximum storage capacity of the reservoir shall not exceed 15 acre feet.

- Permittee shall not use more water under the basis of riparian right on the place of use authorized by this permit than Permittee would have used absent the appropriation authorized by this permit. Based on the information in the Division's files, riparian water has not been used on the place of use. Therefore, consistent with the term, permittee may not divert any additional riparian water for use on the place of use authorized by this permit under basis of riparian right. With the Chief of the Division's approval, this information may be updated, and Permittee may use water under basis of riparian right on the authorized place of use, provided that permittee submits reliable evidence to the Chief of the Division quantifying the amount of water that permittee likely would have used under the basis of riparian right absent the appropriation authorized by this permit. The Chief of the Division is hereby authorized to approve or reject any proposal by Permittee to use water under the basis of riparian right on the place of use authorized by this permit.

The existing well pumps from the groundwater at a depth of 1,100 feet below the ground surface. The well has a solid casing that extends hundreds of feet below the surface, so that it does not generate water that would otherwise flow into surface drainages. The existing well does not substantially deplete groundwater supplies or interfere substantially with groundwater recharge.

	Potentially Significant	Less than significant With Mitigation Incorporated	Less than significant Impact	No Impact
<b>4. BIOLOGICAL RESOURCES. Would the project:</b>				
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the DFG or USFWS?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the DFG or USFWS?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>



	Potentially Significant	Less than significant With Mitigation Incorporated	Less than significant Impact	No Impact
c) Have a substantial adverse effect on federally-protected wetlands as defined by Section 404 of the federal Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption or other means?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory corridors, or impede the use of native wildlife nursery sites?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

A Biotic Assessment was prepared by Marco Waaland, Ecologist, of Golden Bear Biostudies (September 20, 2000), with the assistance of Dr. Michael Fawcett, Wildlife Biologist.<sup>xxviii</sup> The field surveys for the Biotic Assessment were conducted on August 29, 2000 between 9:30 a.m. and 12:30 p.m. The field surveys examined the project site. Findings from the Biotic Assessment are summarized below.

#### Onsite Vegetation

The vegetation of the study area is essentially chaparral. Plants are typically deep-rooted. This plant community is adapted to repeated fires. There is usually little or no understory vegetation and often considerable accumulation of leaf litter. Growth may occur throughout the year but is highest in spring and much reduced during late summer-fall dry season or during the winter at higher elevations. The flowering season extends from late May.

Some trees would be removed as part of project construction. Tree removal would be limited to three to six Knobcone pine trees in the proposed reservoir area. Knobcone pines are not a protected species; their removal would not result in a significant environmental impact. Removal of any tree or trees outside of the limits of work for construction considerations would require the approval of the Engineer and the Applicant's representative prior to proceeding with the work.



### Candidate, Sensitive or Special Status Species

The federal Endangered Species Act (ESA) makes it unlawful for anyone to "take" an endangered species and defines "take" to include "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct" (16 USC 1531 et seq.). The California Endangered Species Act (CESA) (Fish & Game Code 2050-2098) protects listed threatened or endangered species.<sup>xxix</sup> When the USFWS initially reviewed the project in April, 2002<sup>xxx</sup>, the agency was concerned the project would have the potential to result in a take of the federally endangered California freshwater shrimp (*Syncares pacifica*) and threatened California red-legged frog (*Rana aurora draytonii*).

Dr. Fawcett indicated that the Wildlife Report (Appendix B of the Biotic Assessment) is organized in a manner designed to satisfy USFWS protocol regarding red-legged frog habitat assessment (USFWS, 18 February 1997). He determined that: "There is no habitat in the area suitable for dry-season occupation by red-legged frogs, foothill yellow-legged frogs, or northwestern pond turtles, nor any habitat suitable at any time for California freshwater shrimp."<sup>xxxi</sup> This project would not result in the take of threatened or endangered species. Any permit or license issued pursuant to Application 30695 will include the following mandatory term for the protection of threatened and endangered species:

- *This permit does not authorize any act that results in the taking of a threatened or endangered species or any act that is now prohibited, or becomes prohibited in the future, under either the California Endangered Species Act (Fish & Game Code, §§ 2050-2097) or the federal Endangered Species Act (16 U.S.C.A. §§ 1531-1554). If a "take" will result from any act authorized under this water right, the Permittee shall obtain authorization for an incidental take prior to construction or operation of the project. Permittee shall be responsible for meeting all requirements of the applicable Endangered Species Act for the project authorized under this permit.*

### Special –Status Plant Species

No sensitive plant species were observed during field surveys. Flora observed at the site are listed in Appendix C of the Biotic Assessment prepared by Golden Bear Biostudies. Special status plant species with the potential to occur are identified in Table 1 of the Biotic Assessment.<sup>xxxii</sup>

All *Ceanothus* and *Arctostaphylos* species were identified to the species level. No other manzanita or *Ceanothus* that could possibly be considered special status were observed at the site.



### Riparian Habitat

Approximately 300 yards downstream of the proposed reservoir site, in the middle of the vineyard, the channelized stream has small willows and other riparian and emergent vegetation and some boulders in the streambed. Otherwise the project site has little habitat diversity and is dry in the summer. As described in Section 1, Geology and Soils, construction of the reservoir would utilize best management practices and would require a grading permit from the County of Sonoma to minimize downstream sedimentation. The project would be constructed in compliance with the requirements of the Sonoma County Permit and Resource Management Department.

Regarding erosion control, there is a sediment basin at the bottom of the runoff. The basin is cleaned annually, is checked regularly, and is stepped up during rainy periods. Hay bales and straw wattles are used to detour run offs. There are drop inlets throughout the vineyard, which are cleaned during rainy periods. There has been no slippage on the ranch. These practices are pursuant to the Napa Valley Hillside Ordinance.

Near the lower edge of the property, the creek channel has a defined bedrock channel leading into a canyon that eventually joins Agua Caliente Creek near Mount Pisgah. As an ephemeral drainage located above identified springs,<sup>xxxiii</sup> the winter diversion of water would not affect the perennial creek corridor and associated riparian vegetation located downstream of the project area during summer months.

Construction of the project would not result in impacts to riparian vegetation, since there is no riparian vegetation or a defined channel at or near the project site. The reservoir would be constructed in accordance with the Streambed Alteration Agreement required by the DFG. The Applicant will be required to consult with DFG and obtain a Streambed Alteration Agreement prior to constructing or operating the dam. Additional measures required by DFG will be incorporated into the Streambed Alteration Permit. To ensure this, the following standard term will be included in any permit or license issued pursuant to Application 30695:

- *No work shall commence and no water shall be diverted, stored or used under this permit until a copy of a stream or lake alteration agreement between the State Department of Fish and Game and the permittee is filed with the Division of Water Rights. Compliance with the terms and conditions of the agreement is the responsibility of the Permittee. If a stream or lake agreement is not necessary for this permitted project, the permittee shall provide the Division of Water Rights a copy of a waiver signed by the State Department of Fish and Game.*

### Special-Status Wildlife Species

Sensitive species cited in the Division letter as possibly occurring in the project area



include the federally-listed (Threatened) California red-legged frog (*Rana aurora draytonii*), the federally and state-listed (Endangered) California freshwater shrimp (*Syncaris pacifica*), and three Species of Special Concern, the foothill yellow-legged frog (*Rana boylei*), northwestern pond turtle (*Clemmys marmorata marmorata*), and black swift (*Cypseloides niger*).<sup>xxxiv</sup>

"The proposed reservoir site is in a portion of the ephemeral stream drainage that has a barely recognizable stream channel. The surrounding vegetation (manzanita, *Ceanothus*, knobcone pine, grasses, etc.), is more similar to that of a chaparral or high desert association than that of a riparian association. There is no habitat in this area suitable for dry-season occupation by red-legged frogs, foothill yellow-legged frogs or northwestern pond turtles, nor any habitat suitable at any time for California freshwater shrimp."<sup>xxxv</sup> No special status wildlife or their habitats were observed.<sup>xxxvi</sup>

The only wildlife sighted during the survey were western fence lizards, jackrabbits and a few birds including California quail, mourning dove, raven, kestrel, and turkey vulture.<sup>xxxvii</sup> According to CNDDDB records, a single black swift was sighted near Mt. Veeder in 1959. This bird's normal habitat is in canyon and cliff areas, and it breeds in wet cliffs, often behind or near waterfalls.

#### Special-Status Fish Species

As mentioned in Section 3, Hydrology and Water Quality, fish do not spawn or hold-over in ephemeral streams that are dry during the summer months. The resident steelhead in Agua Caliente Creek are supported by spring flow downstream of the proposed water diversion.<sup>xxxviii</sup> Permit terms are provided, however, to support winter runs of steelhead. Recognizing the importance of instream flows to anadromous salmonid production; NMFS distributed draft guidelines in 2000 for maintaining instream flows to protect fisheries resources downstream of water diversions in mid-California coastal streams. These guidelines provided bypass flow recommendations and measures for protecting natural hydrographs. The appropriate bypass is developed on a case-by-case basis. For projects located in the "coastal" watershed in the counties of Sonoma, Napa, Mendocino, and Marin, NMFS, DFG, and the State Water Board have recommended that, in most cases, a bypass that is equal to the February Median Flow be used where needed to protect fish habitat.

The focus for protecting adequate instream flows for fisheries is to limit diversions to periods during winter months when stream flows are generally high. Minimum by-pass flows and the cumulative maximum rates of diversion are used to ensure that streams are adequately protected from the new winter diversions; establishing minimum bypass flows and cumulative maximum rates of diversion help to protect the natural hydrographs of streams.<sup>xxxix</sup>



## Analysis

In the DFG and NMFS Guidelines for Maintaining Instream Flows to Protect Fisheries Resources Downstream of Water Diversions, June 17, 2002 (as amended August 19, 2002), the agencies recommend that if the Cumulative Flow Impairment Index (CFII) is "less than 5%, then no further cumulative analysis of instream flow is required. DFG recommends, "if the percentage is between 5% and 10%, a more detailed analysis is required".<sup>xi</sup>

The May 24, 2004 addendum to the original WAA (March 2, 2004) adds a fourth POI, "Division POI 4" as described in the Hydrology and Water Quality Section, to account for DFG POI 3. The CFII for Division POI 1 at the mouth of Sonoma Creek is 3.5%; the CFII for Division POI 2 on Agua Caliente Creek along its confluence with Sonoma Creek is 2.7%; and, the CFII for Division POI 4 (DFG POI 3) immediately below the confluence of Agua Caliente and Sonoma Creek is 4.2%.

The proposed project is in a small basin at the headwaters of an ephemeral tributary to Agua Caliente Creek. The impacts of the project are expected to be minimal. The area above the diversion from the ephemeral tributary is approximately 1.1% of the overall Agua Caliente Creek watershed and therefore would not have a significant impact on a downstream anadromous fishery supported during the summer months by flow from a spring shown on the USGS 7.5-minute quadrangle. This spring is approximately 2,500 feet downstream from Division POI 3.<sup>xii</sup> Division POI 3 in the Water Availability Analysis was not one of the POIs required by DFG. DFG requested DFG POI 1 immediately below the confluence of the Unnamed Stream and Agua Caliente Creek. However, during the agency site visit (May 28, 2004), DFG determined this POI was unnecessary because there are no diversions on Agua Caliente Creek above the POI, either existing or proposed.

As an intermittent creek located above identified springs, the winter diversion of water would not affect the perennial creek corridor and associated riparian vegetation and steelhead habitat located downstream of the project area during summer months. NMFS agrees that the project poses no risk to threatened anadromous salmonids. The reasons for concluding that the project poses no significant impact to anadromous salmonids are as follows:

- DFG has indicated that the unnamed stream upon which the project is situated is naturally fishless (probably Class 2) and
- The Cumulative Flow Impairment Index (CFII) calculations are relatively low at downstream points of interest (CFII < 5% wherever there are fish at least seasonally present).
- The CFII at Division POI 3 located at the downstream end of the project's unnamed tributary was calculated to be 11%. The score of 11% (does not indicate a significant cumulative impact, because the scored reach is fishless. Additionally, a score of 11% suggests that the stream would very



likely yield almost unimpaired conditions by the time anadromous fish entered Sonoma Creek." <sup>xlii</sup>

According to the NMFS/DFG Draft Guidelines, "If a proposed diversion is located 1) in a stream reach where fishes or non-fish aquatic species were not historically present upstream, and 2) where the project could not contribute to a cumulative reduction of more than 10% of the natural instantaneous flow in any reach where fish are at least seasonally present, and 3) where the project would not cause the dewatering of any fishless stream reach supporting non-fish aquatic species, then no stream flow or fish passage protection measures are required." <sup>xliii</sup> The proposed onstream reservoir is located on an ephemeral headwater stream naturally without fish and will not significantly impact fisheries resources as the flows of streams with fishes are not reduced by more than 10% from unimpaired levels. However, for the protection of instream resources and maintenance of downstream flow, the applicant is required to bypass the February Median Flow.

The February Median Flow as determined at the POD is 0.06 cubic feet per second (cfs). Using the rainfall runoff method, the estimated runoff during the diversion season at POD is 42.2 acre-feet per year. During the allowable season of diversion (106 days), this bypass flow amounts to 12.6 acre-feet. Therefore, after the bypass flow has been achieved, 29.6 acre-feet per year is available for diversion. <sup>xliv</sup>

To ensure that the project is constructed and operated to achieve compliance with season of diversion, minimum flow bypass requirement, and downstream habitat protection, the Applicant was required to prepare and submit for approval of the Chief, Division of Water Rights, a Compliance Plan which clearly describes how compliance with specific terms and conditions will be achieved and monitored. The Compliance Plan, substantially as written, has been reviewed and accepted by the Division and agreed to by the Applicant. Facilities to be used for complying with bypass terms are shown on the Compliance Plan concept bypass drawing, <sup>xlv</sup> and include the following:

- Two slide gates installed on a concrete apron at the inlet of the reservoir, which would allow flow to be diverted to the reservoir during the diversion season or away from the reservoir during the remainder of the year.
- A weir and orifice bypass structure will be constructed which would allow water to first pool behind a weir placed in the inlet channel to the reservoir. The pooled water will pass through a baffled reinforced concrete box structure with an outlet orifice plate which will be sized to bypass the required 27 gpm flow (minimum).
- A 36" diameter bypass pipe that will flow around the reservoir in order to divert flows away from the reservoir during the off diversion season.
- A 6" diameter pipe that connects from the weir/orifice bypass structure into the 36" diameter bypass pipe in order to divert the required 27 gpm flow away from the reservoir.



The following permit terms shall apply to any permit or license issued pursuant to Application 30695 for the purpose of guaranteeing the required bypass flows to the area downstream of the onstream reservoir when such flows are available to be bypassed. In order to reduce impacts to fisheries resources to less than significant levels and implement the Compliance Plan<sup>xlvi</sup> the following special permit terms, substantially as follows, shall be included in any permit or license issued pursuant to Application 30695:

- *For the protection of fish and wildlife, Permittee shall limit all diversions to the period of December 15 to March 31 and shall bypass a minimum of 0.06 cubic feet per second (27 gallons per minute) immediately below the Point of Diversion on the unnamed stream above Agua Caliente Creek. The total stream flow shall be bypassed whenever it is less than the designated amount. The bypass flow will be measured and maintained in accordance with the accepted Compliance Plan dated May 1, 2006, and included in the file for Application 30695. To ensure compliance with this condition in association with a yearly progress report submitted to the State Water Resources Control Board compliance staff, Permittee shall file a report containing the following information:*
  - a. *Dates during the previous period of December 15 to March 31 when water was diverted under this permit;*
  - b. *Flows measured in the unnamed tributary to Agua Caliente Creek during this same period.*
- *No water shall be diverted under this permit until the permittee installs a device, in accordance with the accepted Compliance Plan on file for Application 30695, to measure the bypass flow required by the conditions of this permit. Permittee shall maintain a record of all gage readings in accordance with the compliance plan. Permittee shall furnish evidence that substantiates that the streamflow-measuring device has been installed. If the measuring device is rendered inoperative for any reason, all diversions shall cease until such time as the device is restored to service. Said measuring device shall be properly calibrated, operated, and maintained by Permittee (or successors-in-interest) as long as any water is being diverted under any permit or license issued pursuant to Application 30695.*
- *The monitoring data shall be maintained by the Permittee for ten years from the date of collection and made available to the Chief of the Division of Water Rights, upon request. Any non-compliance with the terms of the permit shall be reported by the Permittee promptly to the Chief of the Division of Water Rights*
- *Diversion and use of water prior to installation of facilities as specified in the May 1, 2006, Compliance Plan on file for Application 30695 is not authorized. Before storing water in the reservoir, Permittee shall furnish evidence that the Compliance Plan has been implemented. Evidence shall include photographs showing completed works or certification by a registered Civil or Agricultural Engineer.*



The State Water Board maintains jurisdiction over all water right permits and licenses. Should conditions in the Agua Caliente Creek watershed change, the State Water Board reserves the right to modify any permit or license to the benefit of instream beneficial uses and public trust.



**Figure 4. Vegetation within the proposed irrigation pond site consists primarily chaparral species.**

The dam will be designed with an outlet facility adequate to bypass inflow when required. Regulatory authority for dam safety and the issuance of grading permits for earth fill structures of non-jurisdictional size (not subject to the jurisdiction of the California Department of Water Resources, Division of Dam Safety) lies with the county in which the project is located. The project is subject to review and approval by the Sonoma County Permit and Resource Management Department for issuance of a grading permit, prior to construction. To ensure that the outlet facility will be properly designed, any permit or license granted under Application 30695 will include a term substantially as follows:

- *In accordance with the May 1, 2006, Compliance Plan on file for Application 30695, Permittee shall install and maintain an outlet pipe of adequate capacity in*



*all dams associated with Permittee's Application. The outlet pipe shall be located as near as practicable to the bottom of the natural stream channel in order that water entering the reservoir, which is not authorized for appropriation under this permit, can be released. Before starting construction, Permittee shall submit plans and specifications of the outlet pipe, or alternative facility, to the Chief of the Division of Water Rights for approval. Before storing water in the reservoir, Permittee shall furnish evidence that substantiates that the outlet pipe has been installed in the dam. Evidence shall include photographs showing completed works or certification by a registered Civil or Agricultural engineer.*

**5. AGRICULTURAL RESOURCES. Would the project:**

	Potentially Significant	Less than significant With Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping & Monitoring Program of the California Resources Agency, to non-agricultural uses?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to non-agricultural use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

The project site is categorized as 'Other Land' on the Sonoma County Important Farmlands Map (1996).<sup>xlvii</sup> As a project that would provide water for the existing 84-acre vineyard, the project would result in beneficial impacts to agricultural resources, helping to ensure continued use of the site for agricultural purposes.

**6. NOISE. Would the project result in:**

	Potentially Significant	Less than significant With Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a) Exposure of persons to, or generation of, noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>



	Potentially Significant	Less than significant With Mitigation Incorporated	Less- Than- Significant Impact	No Impact
b) Exposure of persons to, or generation of, excessive ground-borne vibration or groundborne noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing in or working in the project area to excessive noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) For a project within the vicinity of a private airstrip, would the project expose people residing in or working in the project area to excessive noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

The project area near the top of the ridgeline in the Mayacmas Range is very sparsely populated; there are no sensitive receptors (noise sensitive uses such as hospitals, convalescent homes, schools, and concert halls). Sporadic residences would be the most sensitive land uses in the vicinity. The closest residence is located approximately ½ mile from the proposed reservoir site.

#### Short-term construction Noise and Vibration

During the construction period, project grading and construction of the earthen dam would require bulldozers and other construction equipment that would result in noise levels that are greater than ambient conditions. Typical noise levels for bulldozers and grading equipment would be 65-85 decibels at 100-200 feet. Bauer & Associates notes that anticipated heavy excavation equipment such as a Caterpillar D8L with single tooth rippers is commonly used for excavations in areas with Sonoma Volcanic bedrock. Blasting is not anticipated but subsurface conditions can vary and confined excavations, such as for a pit may require jackhammering or blasting. While construction noise may be audible at the closest residences and some vibration experienced, construction would be conducted from 7:00 a.m. to 7:00 p.m. on non-holiday weekdays and Saturdays to minimize impacts to surrounding residents. In addition, construction equipment would be outfitted with best available control technology for muffling sound. In the event that blasting is required during the construction of the project, the project would comply with all applicable regulations of the Sonoma County Permit and Resource Management Department. Blasting and other



noise-related effects are not potentially significant although blasting is audible for up to two miles.



**Figure 5. The remote nature of the site would minimize disturbance to residents. The closest residence is located approximately ½ mile from the proposed irrigation pond.**

**7. LAND USE AND PLANNING. Would the project:**

	Potentially Significant	Less than significant With Mitigation Incorporated	Less- Than- Significant Impact	No Impact
a) Physically divide an established community?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to, the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>



	Potentially Significant	Less than significant With Mitigation Incorporated	Less-Than-Significant Impact	No Impact
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

The project is located in a remote area at the top of the Mayacmas Range, and would have no impact on an established community. The project supports agricultural use of the site, which is the existing land use. There are no applicable habitat conservation plans or natural community conservation plans that would be impacted by the project. The closest conservation area would be the San Pablo Bay Conservation Program Boundary in the Schellville vicinity, south of the City of Sonoma extending to Sears Point. As identified previously, the zoning area is 84 acres of Rural Resource Development. Irrigation ponds are a permitted use within this zoning designation. An erosion control plan is being developed as part of the project. The plan will be submitted to the Division Chief and to the Sonoma County PRMD as part of the process of obtaining a grading permit.

#### 8. MINERAL RESOURCES. Would the project:

	Potentially Significant	Less than significant With Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a) Result in the loss of availability of a known mineral resource that would be of future value to the region and the residents of the State?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

There are no known State-designated (MRZ-2) mineral resources located at the project site. <sup>xlvi</sup>

#### 9. HAZARDS and HAZARDOUS MATERIALS. Would the project:

	Potentially Significant	Less than significant With Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>



	Potentially Significant	Less than significant With Mitigation Incorporated	Less- Than- Significant Impact	No Impact
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within ¼ mile of an existing or proposed school?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code §65962.5 and, as a result, would it create a significant hazard to the public or to the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or a public use airport, would the project result in a safety hazard for people residing or working in the project area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

### Hazardous Materials

Hazardous materials used for construction of the project would be limited to gasoline and other petroleum products used for construction machinery. These products, when stored and used according to the manufacturer's guidelines and regulatory standards, do not pose significant hazards. No other hazardous materials or waste would be used or generated by the project. No impact is anticipated.

### Schools

The closest school is in Glen Ellen, approximately 2 ½ miles from the site. Other schools in the area are located near Maxwell Farms Regional Park north of the City of Sonoma and within the City of Sonoma.



### Airstrips

The closest airstrip, Sonoma Skypark (South East of the City of Sonoma), is located approximately 6 1/2 miles from the project site.

### Emergency Response

The project would result in a beneficial impact with respect to an emergency response plan because of providing an additional source of water where some residences are located within fire prone areas. A portion of the site burned during the Cavedale fire in 1997.

#### 10. POPULATION AND HOUSING. Would the project:

	Potentially Significant	Less than significant With Mitigation Incorporated	Less- Than- Significant Impact	No Impact
a) Induce substantial population growth in an area either directly (e.g., by proposing new homes and businesses) or indirectly (e.g., through extension of roads or other infrastructure)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

The project would not result in population growth, nor would it displace any housing units or people requiring housing units.

#### 11. TRANSPORTATION / CIRCULATION. Would the project:

	Potentially Significant	Less than significant With Mitigation Incorporated	Less- Than- Significant Impact	No Impact
a) Cause an increase in traffic that is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume-to-capacity ratio on roads, or congestion at intersections)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>



	Potentially Significant	Less than significant With Mitigation Incorporated	Less-Than-Significant Impact	No Impact
b) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Result in inadequate emergency access?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Result in inadequate parking capacity?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Exceed, either individually or cumulatively, a level-of-service standard established by the county congestion management agency for designated roads or highways?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Conflict with adopted policies supporting alternative transportation (e.g., bus turnouts, bicycle racks)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

#### Trucks and other Construction Vehicles Using Narrow Roadways

Impacts related to traffic and circulation would be limited to the construction period. Trucks and other construction vehicles could impede traffic flow on narrow roadways. Trucks would be required to remove soil, rock and other debris that cannot be used on the site. Notification signs would be posted near the project site and at the intersection of Cavedale Road with other area roadways, alerting motorists of the construction period when large trucks may be in the project vicinity.

12. PUBLIC SERVICES. Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service rations, response times or other performance objectives for any of the public services:

	Potentially Significant	Less than significant With Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a) Fire protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Police protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Schools?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Parks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>



e) Other public facilities?

☐ ☐ ☐ ☒

The project would not result in public facility-related impacts. The project would result in beneficial impacts related to fire protection by providing another source of water in a high-fire hazard area.

### 13. UTILITIES AND SERVICE SYSTEMS. Would the project:

	Potentially Significant	Less than significant With Mitigation Incorporated	Less-Than Significant Impact	No Impact
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental impacts?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental impacts?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) Result in a determination by the wastewater treatment provider that serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g) Comply with federal, state, and local statutes and regulations related to solid waste?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Electricity would be used to pump water from the proposed reservoir to the vineyards. Electric lines have already been extended to the site. The project will not result in additional wastewater or solid waste over the long-term. Some soil may be hauled off the site during the construction period, as specified in the Grading Permit required for the project by the County of Sonoma Permit and Resource Management Department (PRMD).

#### New Facilities

The proposed reservoir would be constructed with a diversion ditch and an overflow structure that would be sized to accommodate the 100-year storm.



### Water Supplies

The additional water required for the project is the subject of this Initial Study. This project would provide the necessary entitlements for providing the existing vineyards identified in Figure 2 with an adequate source of water. According to the Water Availability Analysis, sufficient water is available for this project.<sup>xlix</sup>



**Figure 6. The project site is already served by electricity that would be used to pump water from the irrigation pond to the vineyards.**

#### 14. AESTHETICS. Would the project:

	Potentially Significant	Less than significant With Mitigation Incorporated	Less- Than Significant Impact	No Impact
a) Have a substantial adverse effect on a scenic vista?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>



- |  |                          |                          |                          |                                     |
|--|--------------------------|--------------------------|--------------------------|-------------------------------------|
| b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| c) Substantially degrade the existing visual character or quality of the site and its surroundings?  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| d) Create a new source of substantial light or glare that would adversely affect day or nighttime views in the area?                                     | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

The proposed reservoir would be constructed within an ephemeral drainage area leading into Agua Caliente Creek. Vegetation at the site consists primarily of chaparral species. The visual quality of the site is moderate. Views from the site are of a very high quality. The highest portion of the reservoir would be approximately 24 feet from its base, which would be comparable to a two-story structure as viewed from off-site locations. While this would not be a significant visual impact as viewed from off-site locations, vegetation would be maintained, as feasible, to screen the earthen dam as viewed from off-site locations.



**Figure 7. Views of the site have less visual importance than views from the site to the valley floor and bay lands.**





**Figure 8. The site faces Sonoma Mountain to the west. Existing native vegetation would be maintained, as feasible, to minimize visual impact of the earthen dam as viewed from off-site locations.**



15. CULTURAL RESOURCES. Would the project:

	Potentially Significant	Less than significant With Mitigation Incorporated	Less- Than- Significant Impact	No Impact
a) Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Cause a substantial adverse change in the significance of an archaeological resource as defined in §15064.5?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Disturb any human remains, including those interred outside of formal cemeteries?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

This section summarizes the conclusions in the Cultural Resources Study prepared by Tom Origer & Associates for the project site (October 23, 2000).<sup>1</sup>

Archival research found that there are no recorded cultural resources and no known ethnographic sites reported within the study area (Barrett 1908; Kroeber 1925). Kelly (1978:415) places the Coast Miwok village of *wu'ki liwa* about half way between the town of Glen Ellen and the city of Sonoma, but this location is not precise enough to relate it to the current project area. Hayes and Bieling (1983) had conducted one cultural resources study that included portions of the project area. Several archaeological specimens were identified during that study, however, those items were isolated specimens, and do not constitute archaeological sites. The nearest recorded cultural resources are situated approximately 1-2 miles south-southwest of the present project area.

Tom Origer & Associates conducted an intensive cultural resources field survey of the proposed project on October 6, 2000. Dense grasses and forbs covered most of the study area. No prehistoric or historic cultural indicators were found as a result of this field inspection. The absence of freshwater sources in conjunction with rocky soils that supported a limited variety of plants that may have served as food and cover for animals, suggests that the study area may have been a marginally desirable place for prehistoric occupants of the region to have lived and gathered resources.

While potentially significant impacts would not occur and no resource-specific measures are warranted, there is the possibility that subsurface archaeological deposits could be present and unanticipated discovery could occur. The following terms, substantially as follows, shall be included in any permit or license issued pursuant to Application 30695:



- *Should any buried archaeological materials be uncovered during project activities, such activities shall cease within 100 feet of the find. Prehistoric archaeological indicators include: obsidian and chert flakes and chipped stone tools; bedrock outcrops and boulders with mortar cups; ground stone implements (grinding slabs, mortars and pestles) and locally darkened midden soils containing some of the previously listed items plus fragments of bone and fire affected stones. Historic period site indicators generally include: fragments of glass, ceramic and metal objects; milled and spilt lumber; and structure and feature remains such as building foundations, privy pits, wells and dumps; and old trails. The Chief of the Division of Water Rights shall be notified of the discovery and a professional archeologist shall be retained by the Permittee to evaluate the find and recommend appropriate mitigation measures. Proposed mitigation measures shall be submitted to the Chief of the Division of Water Rights for approval. Project-related activities shall not resume within 100 feet of the find until all approved mitigation measures have been completed to the satisfaction of the Chief of the Division of Water Rights.*
- *If human remains are encountered, then the Applicant shall comply with Section 15064.5 (e) (1) of the CEQA Guidelines and the Public Resources Code Section 7050.5. All project related ground disturbance within 100 feet of the find shall be halted until the county coroner has been notified. If the coroner determines the remains are Native American, the coroner will notify the Native American Heritage Commission to identify the most-likely descendants of the deceased Native Americans. Project-related ground disturbance shall not resume, in the vicinity of the find, until the process detailed under Section 15064.5 (e) has been completed.*

16. RECREATION. Would the project:

	Potentially Significant	Less than significant With Mitigation Incorporated	Less- Than- Significant Impact	No Impact
a) Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

The project would have no impact on existing recreational resources and would not require construction or expansion of additional resources. The project occurs entirely on private property near the ridgeline of the Mayacmas Range. The nearest public recreational facilities are in Sonoma Valley, several miles west of the project site.



## 17. MANDATORY FINDINGS OF SIGNIFICANCE.

	Potentially Significant	Less than significant With Mitigation Incorporated	Less- Than- Significant Impact	No Impact
a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Does the project have environmental effects that will cause substantial adverse effects on human beings, either directly or indirectly?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

The proposed project would result in potentially significant impacts related to erosion and sedimentation; geotechnical conditions; hydrology and water quality; and, biological resources. By filing notifications and obtaining the necessary permits from the Regional Board and DFG prior to project construction, and with the implementation of the identified permit terms, potential impacts would be reduced to a less than significant level. Please refer to Appendix A (attached) and the earlier sections in the Initial Study for the full text of the special water right permit terms.



## DETERMINATION

On the basis of this initial evaluation

I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared. ☐

I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. See Appendix A. A NEGATIVE DECLARATION will be prepared. ☒

I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required. ☐

I find that the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed. ☐

I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required. ☐

Prepared By:

Nancy Dakin 3-1-07  
Nancy Dakin Date  
Environmental Planner  
Summit Engineering, Inc. (subcontractor)

Reviewed By:

Katy Washburn 3/2/07  
Katy Washburn, Environmental Scientist Date  
Watershed Unit 1

Steven Herrera 3/2/2007  
Steven Herrera, Chief Date  
Water Rights Permitting Section

(Form updated 7/06/04)

**Authority:** Public Resources Code Sections 21083, 21084, 21084.1, and 21087.

**Reference:** Public Resources Code Sections 21080(c), 21080.1, 21080.3, 21082.1, 21083, 21083.1 through 21083.3, 21083.6 through 21083.9, 21084.1, 21093, 21094, 21151; *Sundstrom v. County of Mendocino*, 202 Cal. App. 3d 296 (1988); *Leonoff v. Monterey Board of Supervisors*, 222 Cal. App. 3d 1337 (1990).



## BIBLIOGRAPHY

- <sup>i</sup> State Water Resources Control Board, Notice of Application to Appropriate Water by Permit, April 10, 1998.
- <sup>ii</sup> The spelling of this mountain range is confirmed on p. 83 of the Northern California Atlas & Gazetteer, DeLorme Mapping Company, 1988.
- <sup>iii</sup> Memorandum Regarding Information Request, Christine Hanna, Owner, Hanna-Bismark Vineyard, to Mark Walters, Summit Engineering, January 27, 2004.
- <sup>iv</sup> Letter from Karen J. Miller, Chief, Endangered Species Division, to Mike Falkenstein, State Water Resources Control Board, Division of Water Rights, April 7, 2000.
- <sup>v</sup> Wagner, D.L. and E.J. Bortugno, 1982, Geologic Map of the Santa Rosa Quadrangle. California Division of Mines and Geology. (As referenced in the Biotic Assessment, Golden Bear Biostudies, September 20, 2000, p.2 )
- <sup>vi</sup> Soil Survey, Sonoma County, California, USDA and University of California Extension Experiment Station (1972)
- <sup>vii</sup> Hanna-Bismark Biotic Assessment, Golden Bear Biostudies, September 20, 2000, p. 3.
- <sup>viii</sup> Hanna-Bismark Biotic Assessment, Golden Bear Biostudies, September 20, 2000, p. 6.
- <sup>ix</sup> Hydrology and Hydraulic Calculations for the Hanna-Bismark Irrigation Pond, Sonoma County, California, Summit Engineering, Inc., April 2001, p. 1.
- <sup>x</sup> The USACE would not have jurisdiction over the project because the proposed reservoir is located in an area without defined creek beds, banks or channels. Telephone communication with Philip Shannin, Senior Project Manager, USACE, September 2, 2005. In a letter stamped May 2, 2006, from Jane M. Hicks, Chief, Regulatory Branch, USACE, to Chris Hanna, Applicant, Ms. Hicks indicates that: "We have determined that there are no waters of the U.S. as defined by Section 404 of the Clean Water Act and no navigable waters of the U.S. as defined by Section 10 of the Rivers and Harbors Act of 1899 within the boundaries of the project site shown in the attached delineation map for your project. Therefore, a Department of the Army authorization will not be required to complete the activity you are proposing."
- <sup>xi</sup> Because the project does not involve installation of a vineyard, it does not need to comply with VESCO. Telephone communication with Gale Davis, Sonoma County Agricultural Commissioner's Office, December 14, 2005.
- <sup>xii</sup> Geotechnical Investigation, including Appendix A – Suggested Geotechnical Specifications, Irrigation Reservoir, Hanna-Bismark Vineyard, Bauer Associates, March 16, 2001, *In File for Application 30695*, SWRCB, Division of Water Rights.
- <sup>xiii</sup> Soil Survey, Sonoma County, California, USDA and University of California Agricultural Experiment Station, (1972).
- <sup>xiv</sup> Geotechnical Investigation, including Appendix A – Suggested Geotechnical Specifications, Irrigation Reservoir, Hanna-Bismark Vineyard, Bauer Associates, March 16, 2001, *In File for Application 30695*, SWRCB, Division of Water Rights.
- <sup>xv</sup> Huffman, M.E., and Armstrong, C.F., 1980; Geology for Planning in Sonoma County: California Division of Mines and Geology, Special Report 120, Scale 1:62,500.
- <sup>xvi</sup> Geotechnical Investigation, including Appendix A – Suggested Geotechnical Specifications, Irrigation Reservoir, Hanna-Bismark Vineyard, Bauer Associates, March



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- 16, 2001, *In File for Application 30695*, SWRCB, Division of Water Rights.
- <sup>xvii</sup> Kramer, Christopher L., and Bauer, Bryce, Bauer Associates, Geotechnical Investigation, Irrigation Reservoir, Hanna-Bismark Vineyard, March 16, 2001, p. 5.
- <sup>xviii</sup> Sonoma County General Plan, December 31, 1998, as amended, Figure PS-1i ([www.sonoma-county.org/prmd/docs/gp/index.htm](http://www.sonoma-county.org/prmd/docs/gp/index.htm)).
- <sup>xix</sup> Meeting with Bill Ledford, Grading and Building Specialist, Sonoma County Permit and Resource Management Department, April 28, 2006.
- <sup>xx</sup> Summit Engineering, Conditions and Specifications for the Irrigation Pond, April 2001; Suggested Geotechnical Specifications, Bauer & Associates, 2001.
- <sup>xxi</sup> Sonoma County allows construction during winter months but requires that all erosion control measures be in place by October 15<sup>th</sup> of each construction season. Meeting with Bill Ledford, Grading and Building Permit Specialist, Sonoma County Permit and Resource Management Department, April 28, 2006. Construction of an on-stream reservoir, however, should occur only during the dry season to avoid any impacts to downstream fisheries. Discussion with Bill Cox, Fisheries Biologist, DFG, April 28, 2006.
- <sup>xxii</sup> Discussion with Bill Cox, Fisheries Biologist, DFG, April 28, 2006.
- <sup>xxiii</sup> Telephone communication with Gail Davis, County Agricultural Commissioner's Office, December 14, 2005.
- <sup>xxiv</sup> Bay Area Air Quality Management District (BAAQMD) CEQA Guidelines, April 1996; Revised December 1999. BAAQMD Office: 939 Ellis Street, San Francisco, CA 94109.
- <sup>xxv</sup> Summit Engineering, Water Availability Analysis, dated March 2, 2004; the Addendum dated May 24, 2004; and WAA, Section 6, Bypass Flow revisions, February 16, 2006. *In File for Application 30695*, SWRCB, Division of Water Rights.
- <sup>xxvi</sup> DFG and NMFS Guidelines for Maintaining Instream Flows to Protect Fisheries Resources Downstream of Water Diversions, June 17, 2002; as amended August 19, 2002.
- <sup>xxvii</sup> Summit Engineering, Water Availability Analysis, dated March 2, 2004; and the Addendum dated May 24, 2004. *In File for Application 30695*, SWRCB, Division of Water Rights.
- <sup>xxviii</sup> Waaland, Marco, and Fawcett, Dr. Michael, Golden Bear Biostudies, Hanna-Bismark Biotic Assessment, September, 2000, *In File for Application 30695*, SWRCB, Division of Water Rights.
- <sup>xxix</sup> Longtin, California Land Use, 2<sup>nd</sup> Edition, 2005 Update, pp. 509-510.
- <sup>xxx</sup> Letter from Karen J. Miller, Chief, Environmental Species Division, to Mr. Mike Falkenstein, State Water Resources Control Board, April 7, 2007.
- <sup>xxxi</sup> Fawcett, Michael H., Fawcett Environmental Consulting, Hanna-Bismark Vineyard Site Assessment and Survey for California red-legged frog and other sensitive animal species, September 13, 2000, p. 1.
- <sup>xxxii</sup> Hanna-Bismark Biotic Assessment, Golden Bear Biostudies, September 20, 2000, p. 3.
- <sup>xxxiii</sup> USGS 'Sonoma' Quadrangle Map, Maptech, Inc.
- <sup>xxxiv</sup> SWRCB – Division of Water Rights, Letter of May 17, 2000 from Mr. Ross Swenerton, Chief, Environmental Review Unit 2 to Mr. Steve Martin, Summit Engineering, Inc. (Letter Included in the Hanna-Bismark Biotic Assessment).
- <sup>xxxv</sup> Fawcett, Michael H., Fawcett Environmental Consulting, Hanna-Bismark Site



Assessment and Survey for California red-legged frog and other sensitive animal species, September 13, 2000, p. 2

<sup>xxxvi</sup> Hanna-Bismark Biotic Assessment, Golden Bear Biostudies, September 20, 2000, p. 6.

<sup>xxxvii</sup> Fawcett, Michael H., Fawcett Environmental Consulting, Hanna-Bismark Site Assessment and Survey for California red-legged frog and other sensitive animal species, September 13, 2000, p. 2.

<sup>xxxviii</sup> USGS 'Sonoma' Quadrangle Map, Maptech, Inc.

<sup>xxxix</sup> DFG and NMFS, Guidelines for Maintaining Instream Flows to Protect Fisheries Resources Downstream of Water Diversions in Mid-California Coastal Streams, June 17, 2002; as amended August 19, 2006, pp.1-2. *In File for Application 30695, SWRCB, Division of Water Rights.*

<sup>xl</sup> Ibid, p. 17.

<sup>xli</sup> Summit Engineering, Water Availability Analysis (WAA), March 2, 2004; WAA Addendum May 24, 2004; WAA, Section 6.0 Bypass Flow, January 30, 2006, as amended February 16, 2006. *In File for Application 30695, SWRCB, Division of Water Rights.*

<sup>xlii</sup> Hearn, Bill, National Marine Fisheries Service, e-mail correspondence to Linda Hanson, Staff Environmental Scientist, Department of Fish and Game, July 18, 2005.

<sup>xliii</sup> DFG and NMFS Guidelines for Maintaining Instream Flows to Protect Fisheries Resources Downstream of Water Diversion in Mid-California Coastal Streams, June 17, 2002; as amended August 19, 2002, p. 7.

<sup>xliv</sup> Summit Engineering, Water Availability Analysis, March 2, 2004, and as revised, January 30, 2006, Section 6.0, Bypass Flows; as amended February 16, 2006.

<sup>xliv</sup> Summit Engineering, Compliance Plan for Flow Bypass Terms, Water Rights Application A030695 for Applicant, May 1, 2006.

<sup>xlvi</sup> Summit Engineering, Compliance Plan for Flow Bypass Terms, Water Rights Application A030695 for Applicant, May 1, 2006.

<sup>xlvi</sup> Important Farmlands Map, Department of Conservation – Division of Resource Protection, 1996.

<sup>xlvi</sup> Sonoma County General Plan, December 31, 1998, as amended, Figure RC-2i. ([www.sonoma-county.org/prmd/docs/gp/index.htm](http://www.sonoma-county.org/prmd/docs/gp/index.htm)).

<sup>xlvi</sup> Summit Engineering, Water Availability Analysis (WAA), WAA Addendum, May 24, 2004; WAA Section 6.0 Bypass Flow, January 30, 2006, as amended February 16, 2006.

<sup>i</sup> A Cultural Resources Study for the Hanna-Bismark Vineyard Project, Tom Origer & Associates, October 23, 2000, *In File for Application 30695, SWRCB, Division of Water Rights.*

## ATTACHMENTS

1. Appendix A: Project revisions agreed to by the Applicant
2. Appendix B: Compliance Plan for Flow Bypass Terms (May 1, 2006)



## **APPENDIX A**

The following revisions in the project (Application 30695) have been made by or agreed to by the project proponent (Applicant):

### **Mandatory Terms**

- This permit does not authorize any act that results in the taking of a threatened or endangered species or any act that is now prohibited, or becomes prohibited in the future, under either the California Endangered Species Act (Fish & Game Code, §§ 2050-2097) or the federal Endangered Species Act (16 U.S.C.A. §§ 1531-1554). If a "take" will result from any act authorized under this water right, the permittee shall obtain authorization for an incidental take prior to construction or operation of the project. Permittee shall be responsible for meeting all requirements of the applicable Endangered species Act for the project authorized under this permit.
- No work shall commence and no water shall be diverted, stored or used under this permit until a copy of a stream or lake alteration agreement between the State Department of Fish and Game (DFG) and the Permittee is filed with the Division of Water Rights (Division). Compliance with the terms and conditions of the agreement is the responsibility of the Permittee. If a stream or lake agreement is not necessary for this permitted project, the Permittee shall provide the Division a copy of a waiver signed by the State DFG.

### **The Applicant has Agreed to the Following Additional Terms as a Condition of Project Approval:**

- The Applicant shall obtain a Building Permit from Sonoma County Permit and Resource Management Department and will be subject to all requirements within the Uniform Building Code for Seismic Zone 4.
- Prior to commencing construction of the reservoir, Permittee shall obtain all appropriate grading permits and other permits required by the County of Sonoma. The plans and specifications for the reservoir construction shall be prepared by a licensed civil engineer and submitted to the Chief, Division of Water Rights. The actual construction work shall be limited to the dry season and shall be carried out under the direct supervision of a licensed civil engineer. The project will be constructed in accordance with the Conditions and Specifications for the Irrigation Pond (Summit Engineering, April 2001), and the Suggested Geotechnical Specifications (Bauer and Associates, 2001).



- Construction of the storage dam shall not begin until the Sonoma County Engineer, the United States Natural Resource Conservation Service, or a civil engineer registered by the State of California has approved the plans and specifications for the dam. Construction of the dam shall be under the direction of said approving party.
- An erosion control plan and revegetation plan for the area where construction equipment will be used and an implementation schedule, prepared by a licensed civil engineer, shall be submitted to and approved by the Chief, Division of Water Rights, prior to starting construction. The plan shall conform to the requirements of Sonoma County and the Streambed Alteration Agreement issued by the California Department of Fish and Game (DFG). Before storing water in the reservoir, Permittee shall furnish evidence, which substantiates that the erosion control/revegetation plan has been implemented. Evidence includes photographs showing the project area vegetation and slopes.
- Erosion control measures shall be implemented in accordance with the requirements of the Sonoma County Permit and Resource Management Department.
- No debris, soil, silt, cement that has not set, oil, or other such foreign substance will be allowed to enter into or be placed where it may be washed by rainfall runoff into the waters of the State. When operations are completed, any excess materials or debris shall be removed from the work area.
- To prevent degradation of the quality of water during and after construction of the project, Permittee shall file a report of waste discharge pursuant to Water Code section 13260 prior to commencement of construction and shall comply with all waste discharge requirements imposed by the California Regional Water Quality Control Board, San Francisco Bay Region, or by the State Water Resources Control Board.
- The Permittee shall obtain all necessary federal, state, and local agency permits required by other agencies prior to construction and diversion of water. Copies of such permits and approvals shall be forwarded to the Chief, Division of Water Rights.
- The water appropriated shall be limited to the quantity which can be beneficially used and shall not exceed 15 acre feet per annum, to be collected to storage from December 15 of each year to March 31 of the succeeding year. This permit



does not authorize collection of water to storage outside the specified season of diversion to offset evaporation and seepage losses or for any other purpose. The maximum storage capacity of the reservoir shall not exceed 15 acre feet.

- Permittee shall not use more water under the basis of riparian right on the place of use authorized by this permit than Permittee would have used absent the appropriation authorized by this permit. Based on the information in the Division's files, riparian water has not been used on the place of use. Therefore, consistent with the term, Permittee may not divert any additional riparian water for use on the place of use authorized by this permit under basis of riparian right. With the Chief of the Division's approval, this information may be updated, and Permittee may use water under basis of riparian right on the authorized place of use, provided that Permittee submits reliable evidence to the Chief of the Division quantifying the amount of water that Permittee likely would have used under the basis of riparian right absent the appropriation authorized by this permit. The Chief of the Division is hereby authorized to approve or reject any proposal by Permittee to use water under the basis of riparian right on the place of use authorized by this permit.
- For the protection of fish and wildlife, Permittee shall limit all diversions to the period of December 15 to March 31 and shall bypass a minimum of 0.06 cubic feet per second (27 gallons per minute) immediately below the Point of Diversion on the unnamed stream above Agua Caliente Creek. The total stream flow shall be bypassed whenever it is less than the designated amount. The bypass flow will be measured and maintained in accordance with the accepted Compliance Plan dated May 1, 2006, and included in the file for Application 30695. To ensure compliance with this condition in association with a yearly progress report submitted to the State Water Resources Control Board compliance staff, Permittee shall file a report containing the following information:
  - a. Dates during the previous period of December 15 to March 31 when water was diverted under this permit;
  - b. Flows measured in the unnamed tributary to Agua Caliente Creek during this same period.
- No water shall be diverted under this permit until Permittee installs a device, in accordance with the accepted Compliance Plan on file for Application 30695, to measure the bypass flow required by the conditions of this permit. Permittee shall maintain a record of all gage readings in accordance with the compliance plan. Permittee shall furnish evidence that substantiates that the streamflow-measuring device has been installed. If the measuring device is rendered inoperative for any reason, all diversions shall cease until such time as the



device is restored to service. Said measuring device shall be properly calibrated, operated, and maintained by Permittee (or successors-in-interest) as long as any water is being diverted under any permit or license issued pursuant to Application 30695.

- In accordance with the May 1, 2006, Compliance Plan on file for Application 30695, Permittee shall install and maintain an outlet pipe of adequate capacity in all dams associated with Permittee's Application. The outlet pipe shall be located as near as practicable to the bottom of the natural stream channel in order that water entering the reservoir which is not authorized for appropriation under this permit can be released. Before starting construction, Permittee shall submit plans and specifications of the outlet pipe, or alternative facility, to the Chief of the Division of Water Rights for approval. Before storing water in the reservoir, Permittee shall furnish evidence that substantiates that the outlet pipe has been installed in the dam. Evidence shall include photographs showing completed works or certification by a registered Civil or Agricultural engineer.
- The monitoring data shall be maintained by Permittee for ten years from the date of collection and made available to the Chief of the Division of Water Rights, upon request. Any non-compliance with the terms of the permit shall be reported by the Permittee promptly to the Chief of the Division of Water Rights.
- Diversion and use of water prior to installation of facilities as specified in the Compliance Plan is not authorized. Before storing water in the reservoir, Permittee shall furnish evidence that the May 1, 2006, Compliance Plan on file for Application 30695 has been implemented. Evidence shall include photographs showing completed works or certification by a registered Civil or Agricultural Engineer.
- Should any buried archaeological materials be uncovered during project activities, such activities shall cease within 100 feet of the find. Prehistoric archaeological indicators include: obsidian and chert flakes and chipped stone tools; bedrock outcrops and boulders with mortar cups; ground stone implements (grinding slabs, mortars and pestles) and locally darkened midden soils containing some of the previously listed items plus fragments of bone and fire affected stones. Historic period site indicators generally include: fragments of glass, ceramic and metal objects; milled and spilt lumber; and structure and feature remains such as building foundations, privy pits, wells and dumps; and old trails. The Chief of the Division of Water Rights shall be notified of the discovery and a professional archeologist shall be retained by the Permittee to evaluate the find and recommend appropriate mitigation measures. Proposed



mitigation measures shall be submitted to the Chief of the Division of Water Rights for approval. Project-related activities shall not resume within 100 feet of the find until all approved mitigation measures have been completed to the satisfaction of the Chief of the Division of Water Rights.

- If human remains are encountered, then the Applicant shall comply with Section 15064.5 (e) (1) of the CEQA Guidelines and the Public Resources Code Section 7050.5. If project related ground disturbance within 100 feet of the find shall be halted until the county coroner has been notified. If the coroner determines the remains are Native American, the coroner will notify the Native American Heritage Commission to identify the most-likely descendants of the deceased Native Americans. Project-related ground disturbance shall not resume, in the vicinity of the find, until the process detailed under Section 15064.5 (e) has been completed.



**APPENDIX B**  
**Water Rights Application A030695**  
**for Hanna Bismark Vineyard**

**Compliance Plan for Flow Bypass Terms**

**I. SCOPE OF COMPLIANCE PLAN**

Bypass requirements are provided in the attached Water Availability Analysis (WAA) prepared by Summit Engineering, Inc. on March 2, 2004 for Water Rights Application A030695. An addendum to the bypass flow calculations was prepared on February 16, 2006 per request of the State Water Resources Control Board (See WAA section 6.0 entitled Bypass Flow). A requirement of 0.06 cfs (27 gpm) is to be bypassed during the diversion season of December 15<sup>th</sup> through March 31<sup>st</sup>. Outside this period, no water shall be diverted under this permit.

**II. FACILITIES TO BE USED FOR COMPLIANCE**

The proposed reservoir is to have a storage capacity of 15 acre-feet per annum. A 24.9 foot earthen dam would be built across the unnamed ephemeral tributary to Agua Caliente Creek creating an on-stream reservoir to collect the water from a single inlet location. Once capacity is reached in the reservoir, the inflow will equal the outflow meaning the additional water is bypassed from the reservoir outlet back to the tributary via an overflow spillway on the opposite end of the reservoir from the inlet structure.

Proposed facilities to be used for complying with bypass terms are shown on the attached concept bypass drawing, and include the following:

- Two slide gates installed on a concrete apron at the inlet of the reservoir which would allow flow to be diverted to the reservoir during the diversion season or away from the reservoir during the remainder of the year.
- A weir and orifice bypass structure will be constructed which would allow water to first pool behind a weir placed in the inlet channel to the reservoir. The pooled water will pass through a baffled reinforced concrete box structure with an outlet orifice plate which will be sized to bypass the required 27 gpm flow (minimum).
- A 36" diameter bypass pipe that will flow around the reservoir in order to divert flows away from the reservoir during the off diversion season.
- A 6" diameter pipe that connects from the weir/orifice bypass structure into the 36" diameter bypass pipe in order to divert the required 27 gpm flow away from the reservoir.



### III. COMPLIANCE ACTIONS

#### Compliance Actions October 15 to December 14:

The Permittee shall record the staff gage reading in the reservoir beginning no later than October 15<sup>th</sup>. Staff Gage readings shall be observed and recorded at a frequency of every 7 days or less. If, prior to December 15<sup>th</sup>, the staff gage reading remains unchanged, or drops from one level to the next, no action is required. However, if the reservoir level rises from one reading to the next, the slide gate will be inspected to ensure that water is not seeping through and entering the reservoir. Water would then be discharged into the reservoir outlet channel via the vineyard irrigation pumps or the reservoir outlet drain valve until the reservoir level falls to the original October 15<sup>th</sup> reading. A final staff gage reading shall be recorded on December 15<sup>th</sup> to document that the October 15<sup>th</sup> reading was maintained.

#### Compliance Actions December 15 to March 31:

Beginning on December 15<sup>th</sup>, the slide gate from which the flow is bypassed around the reservoir will be closed off and the slide gate allowing flow to enter the reservoir will be opened. An orifice plate, which will be sized prior to construction, will be installed on a bypass structure to allow the required flow of 27 gpm (minimum) to be bypassed around the reservoir. The orifice calculations are based on the equation  $Q = CA (2GH)^{(1/2)}$ , where  $Q$  is the discharge in cfs,  $C$  is the coefficient of discharge (0.6, constant),  $A$  is the cross sectional area of the orifice in square feet,  $g$  is the acceleration of gravity (32.2 feet/s/s, constant), and  $H$  is the head on the orifice in feet.

Also beginning on December 15<sup>th</sup>, testing shall be conducted at the outlet of the 36" diameter bypass pipe to ensure that the system is bypassing the required 27 gpm flow. If the bypass is lower than expected, the orifice size shall be adjusted to meet the required flow. Testing shall be conducted and documented monthly during rain events throughout the diversion season.

#### Compliance Actions April 1 to June 1:

Beginning no later than April 1<sup>st</sup> of each year, the slide gate that is directing flow into the reservoir will be shut and the slide gate allowing the water to flow into the 36" bypass diversion pipe will be opened. This will allow the flow to be directed back to its natural drainage course.

The Permittee shall record the staff gage reading in the reservoir beginning April 1<sup>st</sup>. Staff Gage readings shall be observed and recorded at a frequency of every 7 days or less. If the staff gage reading remains unchanged, or drops from one level to the next, no action is required. However, if the reservoir level rises from one reading to the next, the slide gate will be inspected to ensure that water is not seeping through and entering the reservoir. Water shall also be released to



the downstream drainage through the vineyard irrigation pumps or the reservoir outlet drain valve until the reservoir level falls to the original April 1<sup>st</sup> reading.

#### IV. RECORD KEEPING AND REPORTING

The Permittee shall keep a log of all staff and rain gage readings. The log shall include a brief description of the actions taken to document compliance with the seasonal diversion restrictions and bypasses required by the WAA. A proposed log form is attached to this document.

#### V. SCHEDULE FOR IMPLEMENTATION

Due to the current status of the Water Rights Application, construction is not planned to begin until April through July of 2007. The bypass structures and facilities will be constructed along with the reservoir during this time period.

#### VI. ONGOING MAINTENANCE

The Permittee shall inspect slide gates for seepage to ensure that compliance requirements are met.

After the first major rain event of the rain season, the weir board and diversion box structure shall be inspected for sediment build-up at least once every 7 days to ensure compliance.

#### VII. MODIFICATIONS TO COMPLIANCE PLAN

The Permittee reserves the right to propose minor changes to the Compliance Plan based on possible future operational changes. Proposed changes are subject to review and acceptance by the State Water Resources Control Board.

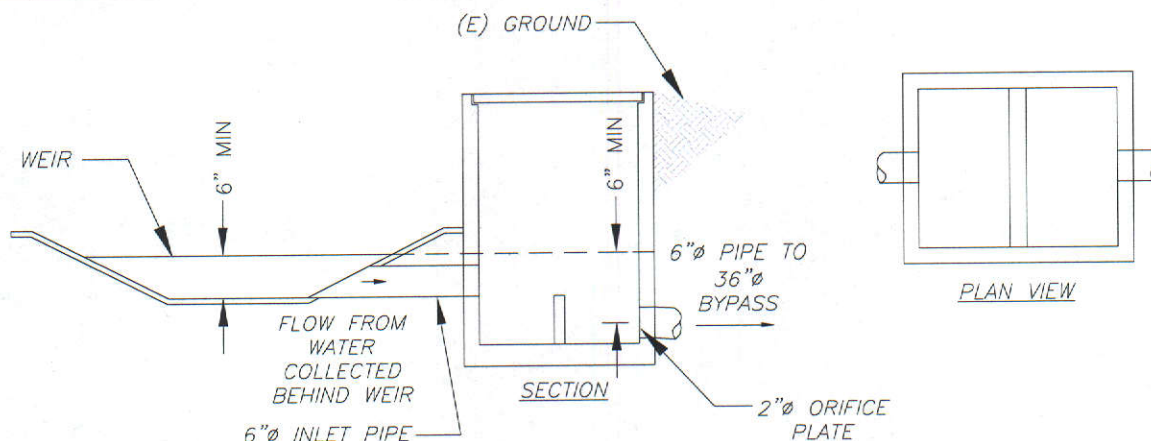


HANNA BISMARCK VINEYARD  
4400 CAVEDALE ROAD  
GLEN ELLEN, CA



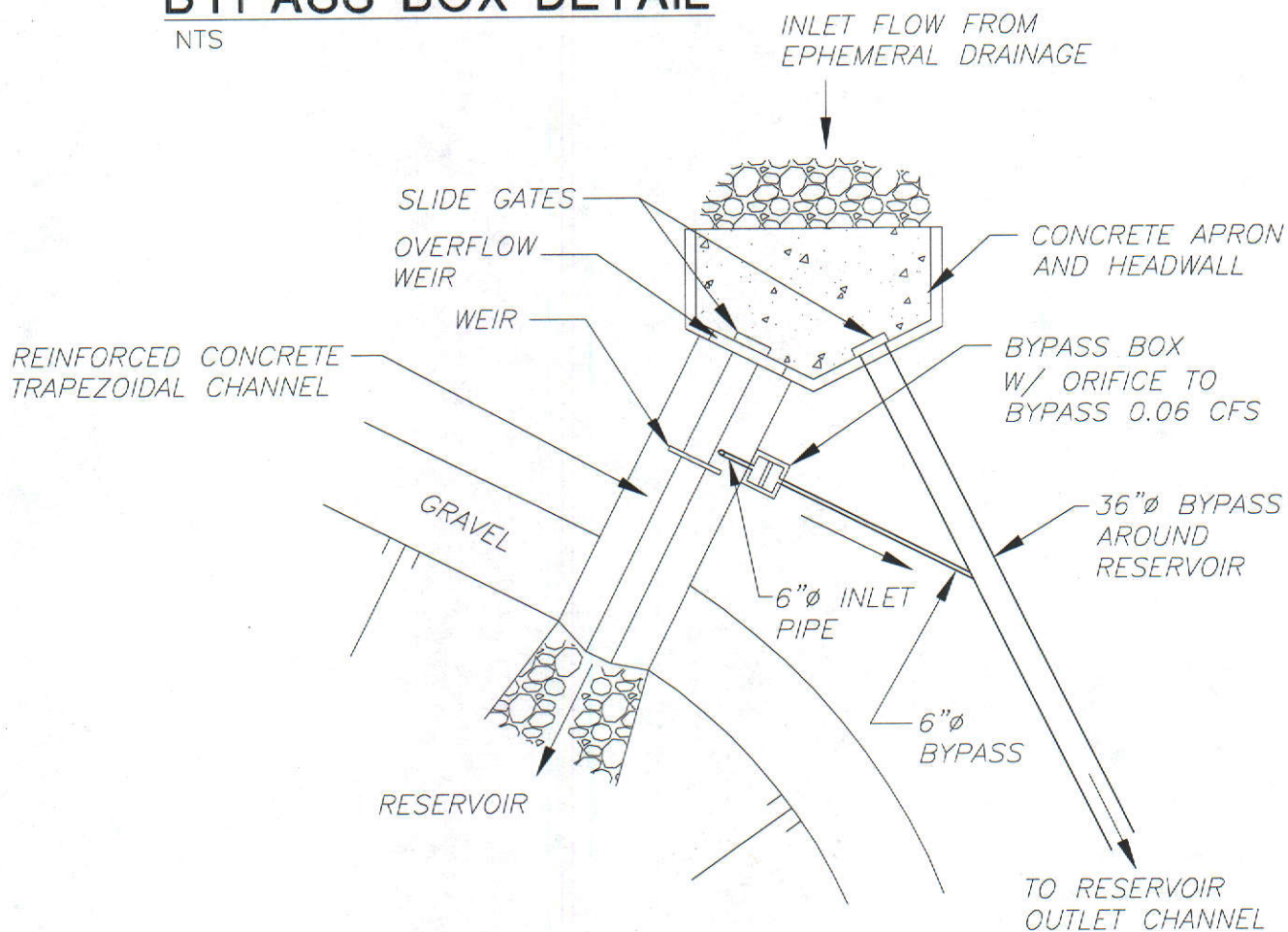
# IRRIGATION RESERVOIR

PROJECT NO. 2002066 DATE 4/6/2006  
BY NSP CHK SHT NO 1 OF 1



## BYPASS BOX DETAIL

NTS



## DIVERSION/BYPASS CONCEPT PLAN

NTS

C:\CAD PROJECTS\2002\02066\DWG\BYPASS DETAIL.DWG PLOTTED ON: 5/18/2006 10:32:01 AM

SUMMIT ENGINEERING INC.

463 AVIATION BLVD. #200  
SANTA ROSA, CA 95403

707.527.0775  
FAX 707.527.0212



Hanna Bismark Winery



Orifice sizing for Bypass structure

PROJECT NO. 2002-066

DATE 5/1/2006

BY NSP

CHK

SHT NO. OF

$$Q = CA\sqrt{2GH}$$

$$Q = 0.06 \text{ cfs} \quad C = 0.6 \text{ (constant)}$$

$$A = \pi r^2 \quad G = 32.2 \text{ ft/s}^2$$

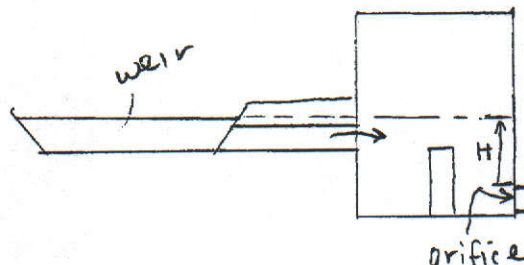
$$\text{Try } H = 0.5 \text{ ft}$$

$$Q = 0.06 = (0.6)(A)\sqrt{2(32.2)(0.5)}$$

$$A = 0.0176 \text{ ft}^2 = \pi r^2$$

$$r = 0.075 \text{ ft} = 0.9" \approx 1"$$

Diameter = 2"



We will only need 6" of head with an orifice size of 2" in order to bypass the required flow of 0.06 cfs (27 gpm).

Any additional head will result in an increase of flow that is bypassed. Required 6" of head is dimensioned on the "Bypass Box Detail."

Assuming a minimum weir height of 6" with an inlet pipe of 6"  $\phi$  going into the bypass box, the capacity of flow (Manning's Eqn.) is:

Assumptions

6" height of weir  
6"  $\phi$  - size of inlet pipe  
 $D/d = 1.0$  (full)  
 $N = 0.011$   
slope = 2%.

$$Q = 1 \text{ cfs} > 0.06 \text{ cfs (required)} \quad \checkmark$$

$$\text{Try } D/d = 0.7$$

$$Q = 0.7 \text{ cfs} > 0.06 \text{ cfs (required)} \quad \checkmark$$

The capacity of a 6"  $\phi$  inlet pipe @ 2% will be more than sufficient to bypass the required flow of 27 gpm.



## Reservoir Operations Log

[illegible]